Peaceful Nuclear Cooperation

U.S. Support for NPT Article IV

UNITED STATES & ARGENTINA

Through the International Atomic Energy Agency (IAEA), the United States contributes to the work of many countries using nuclear materials and technology for peaceful purposes. In recent years, U.S. support has focused on achieving tangible and lasting benefits in fields that are vital to human development, including agriculture, human health, water resource management, and human resource development. Since 2000, the IAEA has approved and funded $7,235,172, including $276,820 in 2013, under its Technical Cooperation (TC) program for projects in Argentina.

In addition to the United States' longstanding support for the IAEA's activities to promote peaceful nuclear applications, at the 2010 NPT Review Conference, the United States announced a $100 million USD effort to expand this support over the next five years. The United States has pledged $50 million towards the IAEA's Peaceful Uses Initiative (PUI), focusing on human health, food security, water resource management, and nuclear power infrastructure development.

The United States views its support for peaceful uses of nuclear energy, to which all NPT Parties are entitled, as a critical part of its broader effort to strengthen the IAEA and the global nuclear nonproliferation regime. The U.S. has already designated over $22 million for IAEA projects benefitting over 120 countries, including Argentina, for which funding was previously unavailable. The United States is working with partners to reach the $100 million goal, and welcomes Japan, the Republic of Korea, New Zealand, the Czech Republic, Hungary, Sweden, Australia, France, Indonesia, Brazil, Italy, the UK and Kazakhstan who have announced their own commitments to the PUI of over $12 million.

HUMAN HEALTH

Early and accurate diagnosis is vital for effective treatment of both heart disease and cancer. The diagnostic and therapeutic applications of nuclear medicine techniques play a pivotal role in the management of these patients, improving the quality of life by means of an early diagnosis allowing opportune and proper therapy.

With cardiovascular disease as the leading cause of death in most Latin American countries and almost 800,000 new cases of cancer in the region each year, Argentina is currently working through a regional TC project supported by the United States to improve the management of cardiac diseases and cancer patients by strengthening nuclear medicine techniques in Latin America and the Caribbean region.

Latin America also faces a double burden today: on the one hand, under-nutrition, and on the other hand, obesity. Argentina is therefore participating in a regional TC project supported by the United States to improve the capacity of key institutions to use nuclear techniques to address each extreme of malnutrition. These techniques include isotopic dilution with deuterium to assess body composition, as well as carbon-13 to measure fat and glucose oxidation. The project will improve the quality of programs in the region; contribute tools for the diagnosis and evaluation of micronutrient deficiencies, obesity and obesity-related chronic diseases; as well as allow the establishment of data for those programs, which will help in the identification of vulnerable groups, planning, and the prioritization of actions to be applied.

NUCLEAR SECURITY

Human resource development is critical for Member States to implement and sustain nuclear security, so Argentina is also participating in a regional TC project supported by the United States to implement the component of the IAEA Nuclear Security Plan 2010-2013 which focuses on institutional capacity building, human resource development and educational programs. This project

1. *Power plant under construction. Credit: Kansai Electric Power Co.*
2. *2012 IAEA-Argonne training developing long-range nuclear energy strategies. Credit: Argonne National Laboratory*
3. *Nuclear analytical techniques can evaluate how well food, fortified with essential nutrients and minerals, sustains the body's health and growth. Credit: IAEA*

will contribute to sustained effective nuclear security worldwide.

NUCLEAR ENERGY

With two nuclear reactors in operation and another under construction, Argentina plans to increase its production of electricity with nuclear power. With enough uranium deposits to feed its domestic nuclear energy needs and possibly even to export a few tons annually, Argentina is participating in a regional TC project supported by the United States to obtain a self-supply of uranium for its nuclear plans while causing the least possible adverse impact on the environment. New professionals need to be trained and new cutting edge equipment must be acquired in order for Argentina to exploit new uranium deposits and to produce uranium concentrates in a way that is environmentally sustainable.

AGRICULTURE

Argentina is also participating in a project, coordinated by the IAEA's Department of Nuclear Sciences and Applications and supported by the United States, to implement capacity building activities to improve food safety and quality through nuclear technology and networking. The project involves workshops, human resource training, and technology transfers, and aims to establish functional networks, raise awareness of food safety and conduct food safety gap analysis in selected countries.

HUMAN RESOURCES

To contribute to Member States' manpower development, the IAEA awards individual fellowships and organizes group training courses. Every year, numerous fellows and training course participants travel to the United States for training in various peaceful uses of nuclear technology and return to their home country to apply the lessons learned.

Since 2000, the United States has hosted multiple training courses that included Argentine participants in fields such as decommissioning, nuclear security, geological disposal, quality assurance in radiotherapy, groundwater hydrology, insect pest control, nuclear power and safety infrastructure, and developing national long-range energy strategies. Training was also provided through the IAEA Fellowship Program to 55 Argentines, 17 of which were sponsored by the United States, in the fields such as reactor technology, animal diseases, nuclear medicine imaging, food irradiation, and radiation medicine and health.

Additionally, since 2000, 55 U.S. experts have traveled to Argentina to collaborate through various IAEA Technical Cooperation projects.

1. *2013 IAEA-Argonne training on quality assurance in physical and technical aspects of radiotherapy. Credit: Argonne National Laboratory*
2. *Radiotherapy center. Credit: Rodolfo Quevenco/IAEA*
3. *IAEA fellows receive training. Credit: Dean Calma/IAEA*

Through bilateral efforts, the United States has provided direct support to Argentina through various collaborative projects such as the exchange of information, expert visits, and training of personnel.

In January 2002, the Authoridad Regulatoria Nuclear of Argentina (ARN) signed an arrangement with the U.S. Nuclear Regulatory Commission (NRC) for the exchange of technical information and cooperation regarding regulatory safety matters.

In June 2006, collaborative research on the physics, biophysics, and radiobiology of boron neutron capture therapy (BNCT) resulted in a major joint publication in the journal, *Radiation Research*. The collaboration also involved improving neutron beam designs for the CNEA research reactor at Constituyentes Center, and measurements of the new neutron source at the reactor at the Ezezia Center. In July 2006, the NRC and ARN also signed an arrangement in the area of thermal-hydraulic code applications and maintenance.

Two years later, in January 2008, the NRC and ARN signed another arrangement regarding the Cooperative Severe Accident Research Program (CSARP).

Additionally, since 2000, one Argentine physician has been certified in the U.S. through the American Board of Nuclear Medicine.